

DESCRIPTION AMENDMENTS

**Rewrite paragraph [0017] to read as follows:**

Conventionally, RIP operations are included either in an information apparatus, or as part of an output device or output system (e.g. in a printer controller). Fig. 1A illustrates a flow diagram of a conventional data output method 102 in which RIP 110 is implemented in the information apparatus. Output devices that do not include a printer controller to perform complex RIP operations, such as a lower-cost, lower speed inkjet printer, normally employ data output method 102. In data output method 102, an information apparatus obtains content (e.g. a digital document) in step 100 for rendering or output at an output device. The information apparatus may include an application (e.g. device driver), which implements RIP operation 110.

The information apparatus generates an output data in step 120 and transmits the output data to the output device in step 130 for rendering. The output device receives the output data (step 140). The output data relating to the content is in an acceptable form (e.g. in an appropriate output size and resolution) to the output engine (e.g. display engine, printer engine etc.) included in the output device. In step 150, the output engine generates the final output. The output data in a conventional output method 102 is usually device dependent.

**Rewrite paragraph [0076] to read as follows:**

Fig. 2A and 2B are block diagrams illustrating components of an operating environment that can implement the process and apparatus of present invention. Fig 2A shows an electronic system 202 which includes an information apparatus 200 and an output device 220. The output device 220 includes an output controller 230. Fig. 2B illustrates a second implementation of an electronic system 204 that includes an information apparatus 200 and an output system 250. The output system 250 includes an output device 220 and an output controller 230 which may be externally connected to, or otherwise associated with, the output device 220 in the output system 250.

**Rewrite paragraph [0153] to read as follows:**

During output process 1002, a user may need to select one or more output devices 220 for output service (step 1010). An optional discovery process step 1020 may be implemented to help the user select an output device 220. During the discovery process step 1020, a user's information apparatus 200 may (1) search for available output devices 220; (2) provide the user with a list of available output devices 220; and (3) provide means for the user to choose one or more output devices 220 to take the output job. An example of a discovery process 1020 is described below in greater detail with reference to Fig. 11.

**Rewrite paragraph [0160] to read as follows:**

Fig. 11 is a flow diagram of an example of a discovery ~~process 720~~ process 1020, which may be an optional step to help a user locate one or more output devices 220 for an output job. The discovery process 1020 may, however, be skipped partially or entirely. Implementation of discovery process 1020 may require compatible hardware and software components residing in both the information apparatus 200 and the output device 220. The information apparatus 200 may utilize the client application 210 or other application 205 in this process. The discovery process 1020 may include:

- An information apparatus 200 communicating with available output devices 220 to obtain information and attributes relating to the output device 220 and or its services such as output device capability, feature sets, service availability, quality of service, condition.
- An Information apparatus 200 provides the user information on each available and or compatible output devices 220.
- A user selects or the client application 210 (automatically or not) selects one or more output devices 220 for the output service from the available or compatible output devices 220.